

REMARKS

Claims 1-16 are pending in the application. Claims 1 and 8 are independent.

An Embodiment of the Present Invention

An embodiment of the present invention is directed to a method of controlling a solid-state image pickup apparatus, which includes:

a photometry step of executing photometry with the field;

a signal processing step of processing the image signal; and

a control step of switching signal processing of said signal processing step in accordance with a result of photometry executed in said photometry step;

wherein the control step includes estimating influence of shading on the image signals from the relatively high photosensitive cell and the relatively low photosensitive cell, and

in the signal processing step, color difference gain processing for the image signal is switched in accordance with control of said control step to thereby lower a chroma of the image signal.

Claim Rejections - 35 U.S.C. § 103

(a) Claims 1-4, 8-11, and 15-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamashita et al. (USP 6,750,437) in view of Suzuki et al. (USP 4,710,803), and Nakano et al. (USP 6,094,220). This rejection is respectfully traversed.

With regard to the “control step” of the present invention, the Examiner states, in the Office Action, that Yamashita discloses the claimed feature in col. 7, line 9 - col. 8, line 11.

Further, with regard to the "signal processing step," the Examiner states that Yamashita discloses the claimed feature in col. 8, lines 2-11.

However, Yamashita merely states, in col. 7, line 9 - col. 8, line 11, the brightness is determined according to the result of the photometry, the system control and operation unit 9 calculates a distance to the object based on signals output from the solid-state image pickup element 4 (which includes photoelectric conversion elements 301 and 302), the lens is focused, main exposure is started, an image signal output from the solid-state image pickup element 4 (i.e., a signal acquired by adding a signal from the photoelectric conversion element 301 and a signal from the photoelectric conversion element 302) is corrected and converted from analog form to digital form, and the converted signal is stored a memory unit 10.

The Examiner states that Suzuki discloses a solid-state image sensor including a plurality of composite pixels arranged in a photosensitive array and each of which including a main photosensitive cell and an auxiliary photosensitive cell.

The Examiner also states that Nakano discloses a signal processor and an image extraction unit for processing an image signal, and a controller for switching signal processing the signal processor in accordance with components of the lens block and with a result of photometry. Further, the Examiner states that Nakano discloses that, in the image extraction unit, the image signal undergoes color difference gain processing wherein the image signal is switched in accordance with a microcomputer of the controller, which will lower a chroma of the image signal.

Applicants respectfully submit, however, that even assuming that the foregoing cited references can be combined, which Applicants do not admit, Yamashita in view of Suzuki and

Nakano fails to disclose or suggest the “control step,” which includes “estimating influence of shading on the image signals from the relatively high photosensitive cell and the relatively low photosensitive cell,” and the “signal processing step,” in which “color difference gain processing for the image signal is switched in accordance with control of said control step to thereby lower a chroma of the image signal,” as recited in claim 1.

The Examiner relies on Ng to allegedly teach an image device with a controller that compensates the shading on the basis of the photometry result along with a gain/filter corrector. However, Ng only appears to teach a shading compensation circuit for sensor nonuniformity correction, based on a dark current and a sensor gain which are different for each pixel on the CCD. *See col. 2, line 61- col. 3, line 1.* These pixels are not disclosed as relatively high and low photosensitive cells. Also, Ng fails to teach or suggest a controller which estimates influence of shading on image signals from both a relatively high photosensitive cell and a relatively low photosensitive cell. Furthermore, even if Ng were to teach relatively high and low photosensitive cells, which Applicants do not concede, one of ordinary skill in the art would still not be motivated to control “estimating influence of shading on the image signals from the relatively high photosensitive cell and the relatively low photosensitive cell,” at least because Ng discloses shading compensation based on dark current sensor gain and not based on “estimating influence of shading on the image signals from the relatively high and relatively low photosensitive cells.”

Applicants submit that the prior art, alone or in combination, fails to disclose at least the aforementioned features of independent claim 1. Therefore claim 1 is allowable.

Claims 2-4, 6, and 7, variously dependent on claim 1, are allowable at least for their dependency on claim 1.

Claim 8 is allowable at least for the similar reasons as stated in the foregoing with regard to claim 1.

Claims 9-11, and 13-16, variously dependent on claim 8, are allowable at least for their dependency on claim 8.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(b) Claims 5 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamashita et al. in view of Suzuki and Nakano, respectively, and further in view of Nakata et al. (USP 6,747,696). This rejection is respectfully traversed.

Claim 5, indirectly dependent on claim 1, is allowable at least for its dependency on claim 1.

Claim 12, indirectly dependent on claim 8, is allowable at least for its dependency on claim 1.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(c) Claims 6-7 and 13-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamashita in view of Suzuki and Nakano, respectively, and further in view of Ng et al. (USP 5,699,102). This rejection is respectfully traversed.

Claims 6 and 7, variously dependent on claim 1, are allowable at least for their dependency on claim 1.

Claims 13 and 14, variously dependent on claim 8, are allowable at least for their dependency on claim 8.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

Conclusion


Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and objections, and allowance of the pending claims are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Maki Hatsumi (#40,417) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

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Respectfully submitted,

  
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